

In Our Catchment – October/November 2015

October rainfall across the catchment ranged from 23mm to about 70mm, which was well below average at most sites. November rainfall was about average, ranging from 53mm to over 130mm. Despite this, the flow was low at many sites, and some ephemeral creeks were dry, reflecting the high evaporation resulting from higher temperatures and very windy spring conditions.

Water temperatures varied a lot, but higher temperatures were associated with very low flows or standing bodies of water, as well as doing sampling later in the day of course. Most water temperatures were within the optimal range for many of our water bugs, which is why we sample them in spring. The notional ideal temperature for optimal aquatic ecosystem health is 19°C.

Across the catchment, pH did not vary a great deal, with some slightly acidic conditions in some of the upper catchment sites, but most being close to neutral 7 or slightly basic, as is usual. There were only 2 sites with pH over 8.5, one probably resulting from high concrete contact time in upper Sullivan's Creek, the other a bit of a mystery. An unusual pH of 9 was measured in a dam in a remnant yellow box - red gum grassy woodland in Watson. There was dense water vegetation extending down into the water column and one possibility is that it is using up carbon dioxide during the day which results in a high pH (the same site had very high dissolved oxygen which helps to support this theory). This may be partly reversed during the night but overall sometimes pH stays higher than normal in water where there is a large amount of algae. We sampled water bugs there a few days later and there were good numbers of water bugs and reasonable diversity, as well as some sensitive taxa, so overall the health of this ephemeral water body appears to be pretty good.

Electrical conductivity (EC) was low in the upper catchment sites and the Queanbeyan River, and high at the usual sites (mostly those with geology resulting in higher levels of dissolved minerals), particularly when flows were lower. Turbidity was again low at almost all sites across Oct and Nov, but noteworthy were one site on the Molonglo River at Briars Sharrow Rd crossing which was elevated over both months, and the rural Urialla Creek which is subject to disturbance from stock or possibly feral pig activity, but not affected at every month's reading.

Total phosphorus really shows how P accumulates at the bottom of catchments, with all the lower catchment sites exhibiting extremely high total P. Since P is usually the nutrient that runs out first in aquatic ecosystems, high P levels can often lead to algal blooms. Interestingly, because total P is always high in lower Sullivan's Creek, it is probably nitrates that are the limiting nutrient there.

Across our catchment, the vast majority of sites had no detectable nitrates or very low levels of N. Only a handful of sites had high N, with the standout by an order of magnitude being the new site on the lower Molonglo River, just above its confluence with the Murrumbidgee River.

Dissolved oxygen (DO) continues to be extremely low in lower Sullivan's Creek. It was also extremely low at the inlet into east O'Malley pond, however this was associated with low flows, as it is at many of the other sites with low dissolved oxygen % saturations. In the Molonglo River though, despite medium flows over Oct and Nov and moderate temperatures, DO from the Travelling Stock Reserve below Captains Flat to Molonglo River Park at Carwoola was very low. There were also a few sites with very high DO, probably related to high levels of photosynthesis, including our new site on the lower Molonglo River, Kelly's Swamp at Jerrabomberra Wetlands, and a wetland at Watson.

Other News & Events

Thanks to everyone who came to our spring Quality Assurance / Quality Control event. We like to see you and your Waterwatch kits at least once a year so we can make sure all is well and you have fresh solutions when you need them. I'll be seeing many of you at the next event in mid-year I hope. Remember we can always organise an alternative day if you can't make the weekend event.

The Water Plant ID Workshop that followed the QA/QC was really well received, and we were lucky to have wetland ecologist Dr Jane Roberts leading us. It was so interesting walking around The Valley Ponds seeing reeds, sedges, and rushes, learning about their different characteristics and ecological functions - and yes "reeds are round & sedges have edges", but not always!

We have completed all our spring water bug (macroinvertebrate) surveys. With the aim of doing one at the bottom of every actively sampled reach in the catchment, we did 24 surveys over Oct and Nov. Thank you so much to the people who came and helped. It's really interesting and enjoyable, so please do come to a Bug Blitz day (or part day) in autumn if you can. I'll try to organise a weekend one too. At the last site I did for the spring sampling, I came across a new water bug I hadn't seen before: a Water Penny larva from a family (*Psephenidae*) of water beetles. The larvae look a bit like trilobites, those ancient sea creatures from distant prehistory. There are so many different water bugs to see and so much to learn!

Molonglo Catchment CHIP Report 2014-15 available

Last time I told you we had released the Catchment Health Indicator Program report (CHIP report) for 2014-15. There is now a higher resolution version for each of the catchments available for you to download. The link to the lower resolution full version of the report is at the top of the webpage, and if you scroll down you'll see higher resolutions versions split up into catchments:

www.act.waterwatch.org.au/chip.html

Feeling Fishy on Film

Why do people care about rivers? There is a lovely 12 minute video that explores this issue, made from the Feeling Fishy Field Day on the Yass River, held last month.

You can see the video posted on 13 December on the ACT Landcare and Waterwatch facebook page at www.facebook.com/ACT-Landcare-and-Waterwatch-466689643385473/. The link takes you to the RipRoc website, which is also worth exploring.

If you scroll down on the facebook page you'll also find a few postings with photos and details about water bugs found during our Bug Blitz days.

Carp Love 20 Degrees

The Carp Love 20 Degrees competition closed on 8 December so I hope you managed to get any sightings recorded before then. There were more than 400 sightings recording during the competition period and the data is currently being analysed. I'll let you know when we have information from that data.

Don't forget that the Feral Fish Scan website will continue to record your feral fish sightings into the future and it continues to be important to record details and location of feral fish aggregation and breeding behaviour www.feralscan.org.au/feralfishscan/uppermurrumbidgee

You'll also find links to the Feral Fish Scan app for iPhone and Android, so you can record your sighting whilst you're out on a river, lake or creek, walking, fishing, kayaking or whatever else you enjoy.

And More on Carp

There is a great article, '*European carp, Australia's toughest invasive fish species?*' by freshwater fish ecologist Jonah Yick at www.themorayslair.org/european-carp-australias-toughest-invasive-fish-species

Here are a few highlights: "The Common Carp (*Cyprinus carpio*) is regarded as one of the most invasive species in the world... not only because of its destructive feeding habits, but its resilience in a variety of environments, and highly fecund reproductive nature. In addition to competing with native fish species for food and space ..., carp are also responsible for habitat degradation and the increasing turbidity in the waters they inhabit ...

"The biology of the common carp is what makes them so destructive, and once established in a particular water, makes the task of eradication difficult and in many cases impossible ... carp have broad environmental tolerances and thrive in habitats that have been disturbed by human activities. ... Female carp mature between 2-4 years of age and can produce over a million eggs each year ... They may also spawn several times in a year if conditions are adequate "

Wishing all you fabulous Waterwatch volunteers a very Merry Xmas. I look forward to seeing you in 2016. Thank you for getting out in the heat, cold, rain and shine throughout the year to collect the data that makes this Waterwatch program increasingly important and valuable to our communities, our region and our environment.

Deb Kellock
Waterwatch Coordinator, Molonglo Catchment Group
waterwatch@molonglocatchment.org.au
(02) 6299 2119

I generally work Tues – Fri from approx. 10.30am – 4.30pm

The operation of the Molonglo Catchment Group is assisted by the Australian Government's Caring for our Country and the ACT Government.